



North Carolina  
Department of Health and Human Services  
Division of Public Health

2728 Capital Boulevard • 1912 Mail Service Center • Raleigh, North Carolina 27699-1912 • Courier 56-32-00  
Occupational and Environmental Epidemiology Branch (919) 733-3410

## **GUIDELINES FOR RE-OCCUPANCY OF FLOODED BUILDINGS**

### **Controlling Exposure to Biological Building Contaminants**

When floodwater enters the living area of a building, water, organic material, and bacteria and other microorganisms are deposited onto hard surfaces and into porous building materials and furnishings. Many building materials and furnishings that remain wet for more than 48 hours will develop visible fungal colonies. These colonies are commonly referred to as mold or mildew.

If a flooded building is to be safely reoccupied, water and the deposited material must be removed from the building and from building materials and furnishings. In addition, all indoor fungal growth that occurred as a result of flooding must be removed from the building by cleaning. The use of biocides is recommended as the final step in cleaning but is not adequate in the absence of thorough cleaning.

Indoor biological contaminants resulting from flooding of buildings can create significant health risk for occupants. Unintentional ingestion of floodwater or sediment can cause gastrointestinal diseases. Inhalation exposure to airborne fungal spores or hyphae may cause allergy-mediated symptoms including upper respiratory irritation, bronchial irritation, asthma attacks, and hypersensitivity pneumonitis. Some fungi may cause infectious respiratory disease (e.g., aspergillosis), while others (e.g., *Stachybotrys sp.*) generate toxins that may cause illness.

Chemical contamination of buildings may result when containers in the flooded building are spilled or when floodwater carries contaminants into the building. In most cases, cleaning to remove floodwater, sediment and debris will remove chemical contamination. If there is reason to believe that there is significant chemical contamination and that building occupants may be at risk, those situations should be evaluated case by case. Call the Occupational and Environmental Epidemiology Section at (919) 733-3410.

## Guidelines for Re-occupancy of Flooded Buildings

Page 2

In order to minimize exposure to biological contamination in buildings and to reduce the risk of illness or disease, these guidelines are offered for re-occupancy of flooded buildings. **A building should be considered unsafe for occupancy until:**

- **Floodwater has been removed and dried from all building materials; furnishings; and heating, ventilating and air conditioning (HVAC) system components.**
- **All building materials, furnishings and HVAC system components have been dried so that they will not support fungal growth.**
- **All sediment, debris and organic material deposited by floodwater have been removed from the building.**
- **Any fungal growth on building materials, furnishings, or HVAC system components that resulted from flooding has been removed by thorough cleaning and not by the application of biocides alone. The most direct means of identifying fungal growth is by visual inspection. Air or bulk cultured sampling is not usually necessary, particularly if visible fungal growth is present.**

These guidelines apply to the parts of the building that are habitable (the heated living area), the wall cavities, and chases adjacent to living areas. Crawl spaces and unheated basements may not need to meet these guidelines.

Occupational and Environmental Epidemiology Branch

Division of Public Health

919-733-3410

September 25, 1999

Reocc5.doc/wss



**Biological Contamination in Buildings -- Inspection Checklist for Re-Occupancy**  
Occupational and Environmental Epidemiology Branch (919) 733-3410

Name of Occupant: \_\_\_\_\_ Name of Owner: \_\_\_\_\_

Address: \_\_\_\_\_ Address: \_\_\_\_\_

County: \_\_\_\_\_ County: \_\_\_\_\_

Telephone: \_\_\_\_\_ Telephone: \_\_\_\_\_

Business: YES NO Residence: YES NO

Name of Person Performing Inspection: \_\_\_\_\_ Date: \_\_\_\_\_

Agency/Address and phone number: \_\_\_\_\_

\*\*\*\*\*

1. Is the building currently occupied? YES NO

2. Is cleanup or renovation of the building in progress? YES NO

3. Was the heating ventilation and air-conditioning system flooded? YES NO

4. Have porous building materials and furnishings that were contaminated with floodwater been discarded? YES NO

List remaining materials and items: \_\_\_\_\_

\_\_\_\_\_

5. Are there wet building materials or furnishings in the building? YES NO

Describe remaining wet materials and furnishings: \_\_\_\_\_

\_\_\_\_\_

6. Have flood debris and sediment been removed from all materials and surfaces? YES NO

Describe remaining debris and sediment: \_\_\_\_\_

\_\_\_\_\_

7. Is there visible fungal growth present on building materials, furnishings or surfaces? YES NO

Describe contaminated surfaces, locations and approximate area ( square feet): \_\_\_\_\_

\_\_\_\_\_

8. Is the building safe to occupy per NC DHHS guidelines for re-occupying buildings? YES NO

9. Recommendations for additional cleanup or renovations: \_\_\_\_\_

\_\_\_\_\_